7.4 M&Ms Probability Activity

Suppose you have a bag of mixed M&Ms with the numbers of each color and type as indicated in the table below.

	Red	**Orange**	**Yellow**	**Green**	**Brown**	***Total***
Chocolate	75	84	55	62	91	367
Peanut	80	52	24	57	35	248
Mint	40	13	49	28	17	147
Total	195	149	128	147	143	762

1) Suppose you draw one M&M.

   a) Find the probability that it is yellow.

   b) Find the probability that it is not peanut.

   c) Find the probability that it is green or brown.

   d) Find the probability that it is neither red nor orange.

   e) Find the probability that it is red, given that it is chocolate.

   f) Find the probability that it is chocolate, given that it is red.

   g) Given that you draw a green M&M, find the probability that it is mint.

   h) Given that you draw a peanut M&M, find the probability that it is orange or yellow.

2) Now suppose you draw 3 M&Ms.

a) Find the probability that they are all orange. Assume that you keep (eat) the M&Ms once they are drawn.

b) Find the probability that they are all orange. Assume that you return the M&Ms back to the bag after each draw.

c) Find the probability that you get a chocolate, peanut, and then mint (in that order). Assume that you return the M&Ms back to the bag after each draw.

d) Find the probability that none of them are brown. Assume that you keep the M&Ms once they are drawn.

e) Find the probability that there is at least one chocolate. Assume that you keep the M&M's once they are drawn. *HINT: Can you use a complement to find this? What is the opposite of 'at least one'?*